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Jennifer Fu

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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

MITCHELL, JASON D

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/721,708
Filing Date: November 24, 2003
Appellant(s): FU, JENNIFER

John Wagner, Jr. (reg. no. 35,398)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/1/08 appealing from the Office action mailed 9/24/07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Bocarsly et al. "End-to-End Testing of IT Architecture and Applications", The Rational Edge, June 2006

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-4, 6-14, 16-21 are rejected under 35 U.S.C. 102(b) as being anticipated by “End-to-End Testing of IT Architecture and Applications” by Bocarsly et al. (Bocarsly).

Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over “End-to-End Testing of IT Architecture and Applications” by Bocarsly et al. (Bocarsly).

Rejection of Claims 1-4, 6-14 and 16-21 as anticipated by Bocarsly.

Regarding Claims 1 and 11: Bocarsly discloses black box testing in a multi-tier application environment comprising:

dividing a multi-tier application into a plurality of tier-specific modules (pg. 3, 1st full para. “For functional testing, points of access include the front-end client, middle tier, content sources, and back-end databases”); and

testing each of said plurality of tier-specific modules as a black box (pg. 4, “Functional Tests at the Component Level”; pg. 9, 1st full para. “applying ... functional ... testing to each of the content-tier systems separately”); and

observing an output of one of said plurality of tier-specific modules (pg. 5, 4th para. “data may be accessed and verified at intermediary stages of transmission between system components”).

Regarding Claims 2 and 12: The rejection of claims 1 and 11 are incorporated, respectively; further Bocarsly discloses an output from a first tier-specific module of said plurality of tier-specific modules is used as input to a subsequent tier-specific module of said plurality of tier-specific modules (pg. 5, 4th para. “data may be accessed and verified at intermediary stages of transmission between system components”).

Regarding Claims 3 and 13: The rejection of claims 2 and 12 are incorporated, respectively; further Bocarsly discloses said output is stored in a computer usable media prior to use as said input (pg. 5, 4th para. “when data is written to temporary database tables”).

Regarding Claims 4 and 14: The rejection of claims 2 and 12 are incorporated, respectively; further Bocarsly discloses said output is stored, prior to said use as said input, for a period of time substantially greater than a time that said output is stored during use of said multi-tier application (pg. 3, 4th and 5th bullets “Test automation, execution, and tracking”; “Test results evaluation”).

Regarding Claims 6 and 16: The rejection of claims 1 and 11 are incorporated, respectively; further Bocarsly discloses at least one of said plurality of tier-specific modules is tested prior to availability of a preceding tier-specific module (pg. 4, 2nd para. “Tests are conducted against individual components as the environment is being built”).

Regarding Claims 7 and 17: The rejection of claims 6 and 16 are incorporated, respectively; further Bocarsly discloses simulated input is used to test said at least one of said plurality of tier-specific modules (pg. 9, 2nd para. “XML requests are submitted to each of the content services”).

Regarding Claims 8 and 18: The method of Claim 1 further comprising performing an end-to-end black box test on said multi-tier application (pg. 5, 3rd para. “When the system has been fully assembled, testing of the environment as a whole can begin.”).

Regarding Claims 9 and 19: The rejection of claims 1 and 11 are incorporated, respectively; further Bocarsly discloses said multi-tier application environment comprises a utility data center (pg. 3, 2nd para. “front-end client, middle tier, content sources, and back-end databases”).

Regarding Claims 10 and 20: The rejection of claims 1 and 11 are incorporated, respectively; further Bocarsly discloses each of said plurality of tier-specific modules executes within a single tier of said multi-tier application environment (pg. 9, 2nd para. “applying ... functional ... testing to each of the content-tier systems separately”).

Regarding Claim 21: Bocarsly discloses a computer usable media comprising test output from a tier-specific module, wherein said tier-specific module performs a portion

of a multi-tier application (pg. 5, 4th para. “when data is written to temporary database tables”).

Rejection of claims 5 and 15 in view of (Bocarsly).

Regarding Claims 5 and 15: The rejection of claims 2 and 12 are incorporated, respectively; further Bocarsly discloses:

automatically comparing an output of said first tier-specific module to an input specification of said subsequent tier-specific module (pg. 5, last full para. “data may be accessed and verified at intermediary stages of transmission between system components”);

Bocarsly does not explicitly disclose halting said testing if said output does not meet said input specification.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to halt said testing if said output does not meet said input specification because the data is corrupted and a bug has been found (pg. 5, 4th para. “For cases in which data corruption can be isolated between two data transmission points, the defective component is localized between those points”)

(10) Response to Argument

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Appellant asserts "Bocarsly does not teach "testing each of said plurality of tier-specific modules as a black box" or "observing an output of one or said plurality of tier-specific modules"" (see 3rd par on pg. 7).

Specifically beginning in the 1st par. on pg. 8, the appellant asserts:

Appellant respectfully disagrees with the present Office Action's characterization of the Bocarsly reference and its comparison to Appellant's invention. Appellant understands Bocarsly to teach a testing approach utilizing only portions of both the typical black box and white box testing methods.

...
Thus, the Present Office action characterizes Bocarsly as teaching a combined white and black box testing technique approach. However, as shown in [Bocarsly pg. 2, last par.], only a select portion of each of the white and black box testing techniques are strategically and collectively utilized. Bocarsly integrates only a select portion of white and black box testing techniques due to "the weaknesses inherent in each". Bocarsly combines the strengths of white and black box testing to achieve a final integrated product. Bocarsly does not teach a combination of white and black box testing techniques that is partitionable into either white or black box testing techniques.

The examiner respectfully disagrees. The appellant has not made clear which 'select portions' of black box testing Bocarsly is asserted to use and which 'portions' are not used. As known in the art "black box", or "functional", testing (see e.g. appellant's pg. 1, par. 3) consists of creating a set of input values and a corresponding set of expected output values, then running a program to be tested using the input values and comparing the generated output values with the expected output values (see e.g. appellant's pg. 2, 3rd par.) The examiner asserts that if any of these 'portions' were to be left out, the test would not work. For example, if no expected output values were created it would not be possible to determine if the program under test preformed correctly (i.e. generated the expected output). Accordingly the appellant's understanding of Bocarsly

appears to be incorrect. Regardless, the claims do not make mention of the weaknesses involved in black box or any other testing method; accordingly, Bocarsly's recognition of them does not represent a patentable distinction from the claims.

Further, as the appellant asserts, Bocarsly discloses a combination of white and black box testing. However, contrary to the appellant's assertion, the two testing methods are in fact 'partitionable'. See for example the first full par. on pg. 3 where Bocarsly discloses:

For performance and scalability [or white box] testing, points of access include hardware, operating systems, applications databases, and the network. For functional [or black box] testing, points of access include the front-end client, middle tier, content sources, and back-end databases

This disclosure makes it clear that the two types of tests are applied to different aspects of the software system and thus are distinct, or partitionable (also see the 1st par. on pg. 4 "The individual functional and performance tests"). For example, black box testing "validates the transactions that each component performs" (see the last par. on pg. 4). White box testing is performed "[i]n parallel to these functional tests [and] exercises each component ... to determine its transaction (or volume) limitations" (see the 1st full par. on pg. 5). Accordingly, those of ordinary skill in the art would recognize that two distinct (i.e. partitionable) tests are performed on each of the various components of the system being tested. And each test returns different test data, (e.g. black box testing verifies data integrity (last par. on pg. 4) while white box testing determines the amount of bandwidth consumed by a component (1st full par. on pg. 5).

Most importantly, the claims do not require performing "black box" testing to the exclusion of all other testing methods. In fact the penultimate paragraph on pg. 13 of the

specification states the appellant's methods are "complimentary and compatible with conventional computer system testing systems and processes". Accordingly, Bocarsly's use of "white box" testing does not diminish his use of the claimed "black box" testing (i.e. both are used). The claims recite "black box testing ... *comprising*: dividing ... testing ... and observing". M.P.E.P. 2111.03 defines the transitional term "comprising" as inclusive or open-ended and does not exclude additional un-recited elements or method steps. ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts"). Thus the use of comprising in the claims allow for the testing to perform as a black box and a hybrid black box white box, since the use of "comprising" would allow the claims to include additional un-recited elements / method steps and still form a construct with the scope of the claims. Appellant acknowledges that the testing is a hybrid version and thus this meets the language of the claims and was rejected as such.

In the par. bridging pp. 9-10, the appellant states:

... Bocarsly specifically points out the perceived flaws of black box testing. Bocarsly also states in particularity that it is "merging white and black box testing techniques" in order to eliminate "the weaknesses inherent in each". Not only does Bocarsly modify black box testing by only using its perceived strengths, it also combines this

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with a modified white box testing. Whereas, Appellant's invention uses only black box testing techniques. Thus, Bocarsly teaches away from Appellant's invention since Bocarsly teaches the merging of only the perceived strengths of both white and black box testing techniques, and explains the use of the black box testing technique by itself as inadequate.

The examiner respectfully disagrees. First, as noted above, Bocarsly does not disclose 'partial' black box testing, but instead discloses black box testing in addition to white box testing.

The appellant's arguments are directed to limitations recited in claims 1 and 11 which are anticipated by the Bocarsly reference as discussed above. Further, to the extent that the appellant's arguments are directed to the rejection of claims 5 and 15, the limitation which was rejected as being obvious over Bocarsly's disclosure is the claimed "halting said testing if said output does not meet said input specification". Bocarsly's recognition of the inherent weaknesses of black box testing is not relevant to this aspect of the claims. M.P.E.P. 2131.05 states that "arguments that the alleged anticipatory prior art is nonanalogous art' or teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention, [are] not germane' to a rejection under section 102. *Twin Disc, Inc. v United States* 231 USPQ 417, 424 (Cl. Ct. 1986) quoting *In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). A reference is no less anticipatory if, after disclosing the invention, the reference then disparages it. The question whether a reference "teaches away" from the invention is inapplicable to an anticipation analysis. Accordingly, Bocarsly disclosure makes obvious the limitations recited in claim 5 and anticipates the language of claim 1 for the reasons discussed above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jason Mitchell/

Jason Mitchell

Conferees:

/Lewis A. Bullock, Jr./
Supervisory Patent Examiner, Art Unit 2193

/Eddie C Lee/

Supervisory Patent Examiner, TC 2100